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SYPHILITIC CONTAGION  
WAS CONVEYED IN THE  
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WITH REMARKS UPON THE  
MEANS OF PREVENTION.

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*Physician to Charity Hospital, and to the Out-Door Department for Diseases of the Skin of Bellevue Hospital.*

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A CASE IN WHICH SYPHILITIC CONTAGION WAS  
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The case which I shall now detail is interesting in the fact that it is an example of the transmission of syphilis in the operation of vaccination by means of blood contagion, and also in the indications which it suggests for the prevention of such accidents in future. It is my purpose now only to consider its bearings upon the question of prophylaxis, reserving for a future time a consideration of the general subject of vaccinal syphilis. I think it can be considered an undoubted case of vaccinal syphilis, which fact will give it very considerable interest when we consider how unreliable and even worthless many of the reported cases really are, so much so that in the literature of the whole country we have not a really undoubted case, such an one as will bear, as this one will, the most careful enquiry into the details of it. Indeed a person who reads attentively the histories of the collected cases of vaccinal syphilis arrives at the opinion that very few of them are really instances of what is claimed for them. While visiting my wards in Charity Hospital on the 26th of January of this year, I was asked by the house physician Dr. Fullilove to see the child of a female convict in the Penitentiary, which presented, as he thought, a suspicious eruption. The infant Edward R., a fine child aged nearly nine months, had been nursed and cared for by its mother only. Over its body was a well marked, quite copious roseola every feature of which pointed to its syphilitic nature. Around the anus were two or three small papules with excoriated surfaces, evidently incipient condylomata. The integument around them was slightly eczematous and fissured, a condition due to the specific inflammation and the moisture of the parts. Had there been any doubt of the nature of the roseola of the body it would have been completely dispelled by an examination of the chin and continuous parts under the jaw, where was to be seen a diffuse coppery maculated condition of the skin, really an extensive declining roseola, which is so often seen in this situation and its neighborhood, upon syphilitic children, particularly as co-existing with roseola and also with papular eruptions. The external ganglia of the body presented the features of syphilis, being enlarged, hard and painless. The child seemed cross and peevish, and according to the statement of the mother it had become very sick within the past ten days, and had refused to nurse from her breast. In short, its general condition was much altered. There were at that examination no lesions of any nature in the mouth. On the right arm a little above the

insertion of the deltoid, I found a large raw elevated induration. It was of oval shape nearly an inch long by half an inch wide and distinctly limited from the surrounding parts by a perceptible sharp border. Its surface was flat, without granulations, having a tendency to bleed, in fact looking raw, and being elevated about one quarter of a line above the normal plane of the integument. The axillary glands were enlarged and hard, but had not reached the great size so often found when a syphilitic chancre exists on the arm. I suspected that the lesion on the arm was a syphilitic chancre, and that it had been the cause of the general manifestations of the disease observed upon the body. I felt certain also that I had to do with a case of acquired syphilis and that the child had been previously healthy. I arrived at this opinion by examining the condition of the eruption which I was certain was the very first syphilitic rash and not a relapse, in which case other eruptions would have preceded it. Then again the features of the ulcer on the arm were such that I could have no doubt as to its being a primary syphilitic lesion. Further than this the situation of the ulcer led me to think that the child had acquired its disease in vaccination. As I found the mouth to be free, I was strengthened in my opinion, for an examination of that cavity revealed the fact that there was no lesion in it; consequently the syphilitic poison did not enter the system there. Having ascertained these facts and being thus suspicious I inquired of the mother and of the orderly into the previous history of the child, and also into the conditions in which it had been placed within the past three months, and I obtained the following facts. First as regards the mother: She was carefully questioned by me and denied ever having had any syphilitic lesions and a careful examination of her convinced me that she was not syphilitic. On the theory that a healthy mother may bear a syphilitic child, the disease being derived from its father, I inquired into the history of the latter, and as far as careful enquiry would help me I was led to think him perfectly healthy. I may here say that the circumstances connected with the infection of the child were so convincing of the fact the syphilis was acquired after its sixth month from other sources than its parents that I really saw no necessity for the foregoing inquiries; but I instituted them in order that no shade of suspicion should rest upon the source of the syphilitic contagion. The child's history is as follows:

It was born in March, 1875, being in every way healthy, and so continued until a short time before I was called to treat it. Its mother was committed to the Penitentiary in July, and had remained there ever since. During its whole life it has been cared for only by its mother, and has not been nursed by any one else, nor has it taken milk from any bottle, more especially one used by other children. In short, I exhausted every inquiry in order to ascertain if possible whether the child had shown any evidence of hereditary syphilis and also whether it had been in any way

contaminated with syphilis from other parties by feeding and suckling, and I firmly convinced myself that the child neither inherited the disease, nor did it acquire it in a manner other than the one to be mentioned. In support of this statement I may add that similar inquiries were made and a like result was reached by several of my hospital colleagues, among whom I now recall Drs. Kitchen, Sturgis, and Frankel and by my invitation Dr. F. P. Foster who, having made a thorough examination, fully concided with my view. Early in November, it was ordered that a number of the inmates of the Penitentiary should be vaccinated, among whom were the infant Edward and his mother. The records show that the operation was done Nov. 7th, and about twenty persons were vaccinated. I will briefly give the circumstances as I obtained them, stating that I took care to eliminate all error and that the facts as given are true in every particular. The vaccination was done by a physician who used an ordinary toothed scarificator. The vaccine was in quill form and was furnished by the Board of Health. The physician vaccinated about twenty in succession, using the same instrument, and having performed the operation on one went on quickly to the next patient. It was clearly proved that he did not wipe or in other ways cleanse his instrument, but having used it on one, applied it without delay upon the arm of the next. It is unnecessary to go into the proof of this fact as it was so clearly established that no possible doubt can rest upon it. The child Edward was vaccinated immediately after a young woman, a prostitute, had been vaccinated, and before her about six adults had been similarly treated. I may here say that the mother and nurse both observed that the instrument was taken directly from the arm of this young woman and applied to that of the child. After the operation on the latter several others were vaccinated among whom was another infant, but none of them were infected with syphilis as shown by subsequent facts. The vaccine vesicle of the infant under question, ran a normal course, being in every essential perfect. The crust formed in due time and having become dried it fell off and was found in the bed by the mother at about the sixteenth day. The latter then observed that a slight excoriation remained, but she said that she had seen the same in her other two children. To protect this slight sore she simply applied a linen bandage which was ascertained to be perfectly clean. Instead of healing, however, this lesion increased in size, becoming broader and higher. During the time of the vaccination and for the whole period in which the arm was sore no one other than the mother cared for the child or in any way interfered with its arm. About the first of December, the excoriation had developed into a well marked elevated ulcer which was then seen by Dr. Fullilove, who stated to me that it was somewhat smaller then when first seen by me, the features of which I have already described. Nothing especial was noticed by the mother during the next month except the slight increase in size of the ulcer. But about the

middle of January, 1876, the child began to grow thin and pale, restless at night and refused to nurse. Then very shortly the mother observed a rash over its buttocks and finally when my attention was called to the case I observed the lesions as I have described them. I may here add in order to complete the history of the syphilis, that the child was treated with mercurial inunctions, and it took internally iron and quinine, and its mother was ordered to take it out every fine day for two hours in the open air. Under this treatment it became very much better and its rash rapidly disappeared. While under observation its mouth was carefully watched and several commencing mucous patches were quickly cured, the mother being protected from contagion by using a nipple shield. Early in March, the mercurial treatment having been suspended for a week, by order, a small relapse of syphilitic papules was found, but in other respects the child was better. The ganglia are very much reduced in size.

Let us now trace carefully the chronological course of the syphilis. We will therefore compare the dates of the evolution of the primary and secondary lesions as they are given, and ascertain whether they accord with the well-known laws of the development of this disease, leaving for later consideration, the mode of contagion and assuming, as we are warranted in doing, that it took place at the time of vaccination. The syphilitic poison was deposited upon the child's arm on the 7th of November, vaccine contagion also being implanted, it ran its course normally, and we find no evidence of a primary syphilitic lesion until about twenty days after, when such appeared as a small excoriated elevation. The first period of incubation, or rather that of the initial lesion of syphilis was about twenty days. This length of time is in accordance with well-established facts, hence it is proof in favor of the syphilis having been transmitted in the operation of vaccination. I have had the opportunity of tracing the development of the initial lesion in children, caused by mucous patches, and have observed that it is unusually short in them; hence others having a similar experience might perhaps regard twenty days as quite a long period in the child; but it must be remembered that the vehicle of contagion in this case was blood, and that such inoculations are generally followed by periods of incubation rather longer than usual. The initial lesion having appeared about the 27th of November, and the evolutions of secondary lesions having taken place about the 10th or 14th of January, we find that the second period of incubation, or development, of syphilis included a space of about forty-six days or rather more than seven weeks. These figures accord quite closely to well-known precedents, for we usually consider the second period of incubation at about six weeks, it being rarely longer than eight. Thus, I think that no doubt can be cast on the question of the origin of the syphilis in this case, as the dates point conclusively

to the vaccination as being the time of contamination. We have, however, one point yet to consider, namely: from which person was the contagious blood derived. On this I am fortunately able to speak with some precision. I have since learned that the young prostitute who was vaccinated immediately before the child Edward was in the secondary period of syphilis, she having within six months of the date of vaccination, had general syphilitic manifestations, such as papular syphilitides, mucous patches, angina, and pains at night. She had had slight treatment at the time of the existence of these lesions, but none within four months of the date above mentioned. In view of this condition of the woman's system there can be no doubt of the contagious nature of her blood, as she was virtually a woman in whom syphilis in an active form existed, not having been properly treated. It is very probable, however, that had she been treated properly, her blood would have been contagious still at that early date: namely, within the first year of syphilitic infection. Knowing as we do positively the condition of her system, that she was vaccinated immediately before the child, and still further taking into consideration the method of vaccination with the subsequent result, as attested by undoubted facts and dates, there can certainly be no reasonable doubt of the syphilis of the child being derived from this woman, owing to the careless performance of the operation of vaccination. All these facts therefore, I think, prove:

1. That the child Edward R. was not afflicted with hereditary syphilis, which had been, as we may say, evoked or roused into activity by the vaccine disease.
2. That he was the victim of acquired syphilis, which entered the system on the arm at the same time that the vaccine contagion was implanted thereon.

3. That the syphilitic contagion was conveyed in the blood, and perhaps in the epithelial debris which was carried on the toothed scarificator from the arm of the prostitute E. L. to the arm of the infant E. R.

Thus then, we have here an instance of syphilitic blood contagion in the operation of vaccination, upon which there can be no doubt cast. I shall not now consider the general question of vaccinal syphilis as I shall leave that for a future occasion, but shall briefly call attention to the practical lesson taught by this case. It may be well, however, to allude to the fact that this case shows in a remarkable manner how two contagions coincidentally implanted in the system, may run their normal course in a typical manner uninfluenced the one by the other. The further bearings of this question I shall consider at a later date.

Now, then, as to lessons inculcated by the case, we are taught by it, that in the performance of vaccination, there is a great danger that syphilitic contagion may be conveyed from one person to another by means of an instrument uncleansed, or improperly

so. The disastrous result in this case shows that we cannot be too careful in cleansing our instruments after vaccination. This is essential under all circumstances, as it is probable that blood dried in a scarificator may convey syphilis. Then again, when a large number of people are vaccinated one after another, as took place when this child was thus treated, either a new scarificator should be used on each person, or the one used should be cleansed in the most thorough manner after each operation. There is such a strong probability, that among a large number of persons, there will be one or more syphilitics, that we cannot be too much on our guard against any possible chance of the transmission of syphilis, and the case in point shows that in the hurry incident to the vaccination of about twenty persons, the operator may thoughtlessly and carelessly pass from one to another, using an uncleansed instrument, and thus convey syphilis to one or more persons. The indication is simple; *always use a perfectly clean scarificator!* Finally I may add that the dangers of syphilitic blood contagion are made greater in this operation than under many other circumstances, for the physician having made the necessary scarification upon the arm of a syphilitic, has on the teeth of his instrument blood and epithelial debris; if this is not removed, but implanted on the excoriated surface of the next person, the chances of contagion are very great, as he then rubs in the vaccine freshly over the surface, and, of course, the contagious particles are also as actively rubbed in. It will be seen then, that the danger of conveying syphilis is very great. As so few instances like the one detailed in this article are published, we may infer that this accident is not frequent, hence, that among practitioners great care generally is exercised.

Strange to say this danger peculiar to vaccination has not been as thoroughly considered by authors as its importance really demands, as very many do not even mention it. I was much surprised while reading the very brilliant discussion upon vaccinal syphilis\* which occurred in the Academy of Medicine of Paris, in which nearly all the eminent French physicians took part, that this accident was not thoroughly brought forward; indeed it seemed to have escaped all, for Ricord but alluded to it in an uncertain and vague manner and failed utterly to give it prominence or even a clear enunciation. Since then, however, the subject has been well treated by M. Raymond Petit,† and also in this country by my friend Dr. F. P. Foster ‡ in his valuable series of articles.

**Postscript.** Though not essentially connected with the subject of study of this paper, I desire to make a few remarks here as to the value of mercurial inunctions, particularly in hereditary syphilis. I have for years directed this treatment in many cases of syphilitic children, and the unvarying good results warrant me in still using it. In the child, the subject of this paper, this

\* De la Syphilis Vaccinale. Paris, 1865.

† Transmission de la Syphilis par la Vaccination. Paris, 1857.

‡ Vaccine Syphilitic inoculation. Am. Jour. Derm. and Syph. 1870-1871.

treatment was wonderfully rapid and the results were most satisfactory. Indeed, for these subjects, I think it offers advantages not possessed by other methods of treatment, for instance, certainty of dose and of absorption ; also immunity of the gastrointestinal tract from long-continued mercurial action which may derange it. The stomach may then receive, if necessary, tonics of iron and quinine, and is unimpaired in its function. When to these advantages we add strikingly rapid and beneficial results, it is seen that we have a more than ordinarily desirable therapeutic method. I have used these inunctions chiefly for the syphilitic lesions of the skin and mucous membranes, such as we ordinarily use in hereditary syphilis, but in cases in which osseous lesions are also present, I have found that owing to the absolute necessity for long-continued courses of mercury it is better to give the patients the mixed treatment in which mercury and iodide of potassium are combined. The reasons are, first, that it is a matter of the greatest difficulty and trouble to get the mothers or nurses to continue with the necessary regularity the administration of the inunctions, as they after a time neglect them for weeks and days, whereas when they simply have to give a dose of medicine, neglect does not so often occur. It is only after a practical experience in this matter that one really appreciates the force of the statement. Thus it was that in order to cure many of my cases of syphilitic osseous lesions I was forced to resort to the course of treatment laid down in my works on that subject (*Syphilitic Lesions of the Osseous System in Infants and Young Children, N. Y., 1875*), as I could not in several of them obtain a proper use of the inunctions. Then, again, as there stated, experience, after a comparative trial of various modes of treatment, thoroughly convinced me that in these cases of osseous lesion the cure is hastened by combining the iodide with the mercury, as I have seen instances in which the resolution of bony tumors remained at a stand still under mercury alone, even in inunction form, and when the iodide was added, marked and rapid diminution followed. This I observed more than once. I have in the same work spoken of the further peculiar advantages of a combined treatment in these cases, but I think that the ones here adduced are sufficient to prove its worth. I interpolate these remarks here, as I see by reading some recent reviews of my book, that some writers have formed an impression that I do not appreciate the great value and utility of the inunction cure in hereditary syphilis. As this note will show I do most fully appreciate the advantages to be obtained, and very frequently avail myself of them. Indeed, by preference, I do in every proper case. In the particular ones specified I prefer another form of treatment for the reasons there stated, which I think will be considered weighty. Indeed, an extended practical experience in the treatment of syphilitic osseous lesions in infants, I think, will thoroughly convince an impartial observer that the mixed treatment is more efficacious than any other.

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